

**ABSTRACT**

A method of terrain mapping and/or obstacle detection for aircraft, comprising:

- (a) transmitting a non-scanning beam that illuminates the terrain and/or obstacles;
- (b) receiving a Doppler shifted signal that is Doppler frequency shifted by an amount  
5 dependent on an angle between a line of flight of the aircraft and scatterers that reflect the  
transmitted beam;
- (c) determining the angle from the Doppler frequency;
- (d) determining the range of at least some of said scatterers; and
- (e) determining the azimuth and elevation of the scatterers.

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